

**Notice of Allowability**

Application No.

10/790,939

Examiner

Quoc D. Hoang

Applicant(s)

SULTAN ET AL.

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 08/17/2006.
2. ☒ The allowed claim(s) is/are 8-13 and 16-21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                     |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other _____   |

**DETAILED ACTION**

***Response to Amendment***

1. Amendment filed on 08/17/2006 has been entered. Claims 14 and 15 have been canceled. Claims 1-13 and 16-21 are pending in the application.

***Examiner's Amendment***

2. An examiner's amendment to the record appears below. Should any changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Honeycutt on November 7, 2006.

- in claim 16, line 1, replacing "claim 1, wherein the impurities of the first and second halo regions comprise boron, BF<sub>2</sub> or indium" with --claim 8, wherein the impurities of the halo regions for the first group of transistors comprise boron, BF<sub>2</sub> or indium--.
- in claim 17, line 1, replacing "claim 1, wherein the impurities of the first and second halo regions comprise phosphorus, arsenic or antimony" with --claim 8, wherein the impurities of the halo regions for the first group of transistors comprise phosphorus, arsenic or antimony--.
- cancel claims 1-7.

***Allowable Subject Matter***

3. Claims 8-13 and 16-21 are allowed.

The following is an examiner's statement of reasons for allowance:

As to claim 8, the prior art of record taken along or in combination, fails to teach or reasonably suggests forming halo regions for the first group of transistors by implanting the substrate with impurities in a first direction substantially perpendicular to the first axis, and implanting the substrate with impurities in a second direction substantially opposite the first direction and substantially perpendicular to the first axis, and without implanting impurities in a direction substantially parallel to the first axis; and forming halo regions for the second group of transistors by implanting the substrate with impurities in a third direction substantially perpendicular to the second axis, and implanting the substrate with impurities in a fourth direction substantially opposite the third direction and substantially perpendicular to the second axis, and without implanting impurities in a direction substantially parallel to the second axis.

As to claim 18, the prior art of record taken along or in combination, fails to teach or reasonably suggests wherein the first and second halo regions of the first group of n-channel transistors and the first group of p-channel transistors are formed without implanting impurities in a direction substantially perpendicular to the first and second directions, and the third and fourth halo regions of the second group of n-channel transistors and the second group of p-channel transistors are formed without implanting impurities in a direction substantially perpendicular to the third and fourth directions.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quoc Hoang whose telephone number is (571) 272-1780. The examiner can normally be reached on Monday-Friday from 8.00 AM to 5.00 PM.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun Harvey can be reached on (571) 272-1835. The fax phone numbers of the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Quoc Hoang  
Patent examiner/AU 2818

*Quoc Hoang*  
*[Signature]*  
Primary Examiner  
11/13/2006